

THE BRITISH COMPUTER SOCIETY

THE BCS PROFESSIONAL EXAMINATIONS BCS Level 5 Diploma in IT

IT PROJECT MANAGEMENT

30th April 2008, 10.00 a.m.-12.00 p.m.

Answer FOUR questions out of SIX. All questions carry equal marks

Time: TWO hours

*The marks given in brackets are **indicative** of the weight given to each part of the question.*

Only **non-programmable** calculators are allowed in this examination.

1.

- a) Describe the FIVE main areas of activity that the project manager must undertake between the start of project and work starting on the technical deliverables.
(10 marks)
- b) Identify FIVE key types of activity undertaken by the project manager during execution of a project, giving an example activity for each type.
(5 marks)
- c) Describe the FIVE main areas of activity that the project manager must carry out after the technical deliverables have 'gone live' but before the project is formally closed down.
(10 marks)

2.

- a) Explain the difference between top-down and bottom-up estimating.
(8 marks)
- b)
 - i) Describe briefly COCOMO.
(6 marks)
 - ii) Identify SIX productivity drivers for software development. These may or may not be associated with COCOMO.
(6 marks)
- c) Describe the Delphi technique and why it might be useful in estimating.
(5 marks)

Turn over]

3. A small IT department has been asked to set up an online enquiry database system. The IT manager (who will act as project manager) has drawn up an initial plan of the work involved:

	Activity	Weeks
A	elicit requirements from the intended users, and draw up a specification	3
B	design the underlying database	2
C	build and test the input and data validation software	7
D	build and test the enquiry software	5
E	build and test the reports software	4
F	integration testing	2
G	write the user manuals	3
H	system testing by the end users	2

Task B must follow A

Tasks C, D and E can run concurrently, but must follow B

Tasks F and G can run concurrently, but cannot start until all three tasks C, D and E have been completed

Task H must follow tasks F and G

- a) Draw an activity-on-node network diagram for this project, showing the earliest and latest start and end dates, and the float for each node. Use week numbers as the time units. Highlight the critical path on the diagram and state the minimum duration for the project.

(11 marks)

- b) The IT manager has one analyst (named M) and three programmers (named X, Y and Z) available for the project. The analyst is also an experienced database designer, and will write the user manuals. One of the programmers (programmer X) has good experience of developing data input programs.

On the network diagram allocate these four IT staff and the end users to the tasks concerned.

(4 marks)

- c) At the time of the project, programmer Z is no longer available. Bearing this in mind, re-draw the project plan as a Gantt chart. On this diagram name the resources required for each task and state the new minimum duration.

(8 marks)

- d) Briefly, give two advantages of using a Gantt chart, in comparison with an activity-on-node diagram, to display the project plan and resource allocations.

(2 marks)

4. AlphaCo is a manufacturing company specialising in ball bearings. It has grown over the last few years and after a review into its IT systems it has decided to rewrite all the company's IT systems. This task is too big for AlphaCo's small IT department so the contract for creating the new systems has been given to Gammalnc. The role of AlphaCo's IT department is to manage the contractor and implement the finished systems.
- a) Draw a project organisation chart that shows how the two companies can work together. The diagram should consider key roles and who might be suited to them and how roles report/liaise with each other.
(10 marks)
 - b) Create a report format for reporting key information on the project. This report should be completed by the project manager every month and submitted to the client.
(10 marks)
 - c) Describe possible causes of change in the frequency of this report.
(5 marks)
5. A travel agent is considering the replacement of its existing holiday booking system as this system is considered to be too restrictive in the range of options that can be offered to potential clients and users, and can be difficult to use. There are also an increasing number of problems with its continuing reliability and maintenance.
- a) Identify up to FIVE significant factors that might be included in the business case for such a project, together with TWO specific financial measures that could be used to assess its financial viability.
(10 marks)
 - b) The business case has been accepted and an external company has been commissioned to undertake the project at an agreed cost. The project will comprise:
 - i) final agreement of functional requirements
 - ii) development and testing of replacement software
 - iii) purchase and installation of replacement server, PCs and printers
 - iv) implementation and maintenance of new systemFor EACH of these four components identify ONE potential problem that might arise, and explain its possible effect on the original business case.
(8 marks)
 - c) Consider specifically items i and ii above, and identify THREE key reports that the project manager would require from their team in order to monitor and control these stages of the project and ensure that the business case is maintained. Identify a key action that the project manager should take to ensure the effectiveness of this monitoring and control.
(7 marks)

6. a) i) Describe THREE differences between quality assurance and quality control
(9 marks)
- ii) Provide an example of a quality assurance activity and an example of a quality control activity.
(4 marks)
- b) What is a peer review and what may influence your decision to adopt it on a project?
(6 marks)
- c) The emphasis on quality control can sometimes be placed on either inspecting design documentation early in the project or testing the finished products late in the project. Describe THREE advantages or disadvantages of either emphasis.
(6 marks)